

IN THE UNITED STATES DISTRICT COURT FOR THE
EASTERN DISTRICT OF VIRGINIA
Alexandria Division

THE SAUNDERS GROUP, INC.,)	
)	
Plaintiff,)	
)	1:05cv691
v.)	
)	
COMFORTRAC, INC. and)	
CARE REHAB and ORTHOPAEDIC)	
PRODUCTS, INC.,)	
)	
Defendants.)	

MEMORANDUM OPINION

Before the Court are the parties' motions for summary judgment. Defendants ComforTrac, Inc.'s and Care Rehab and Orthopaedic Products, Inc.'s Motion for Summary Judgment of Non-Infringement (Docket # 64) seeks a judgment declaring that their products, known as the G2 and G3 cervical traction devices, do not infringe the plaintiff's patent, U.S. Patent No. 6,899,690 (filed Dec. 16, 2002, and issued May 31, 2005) ("the '690 Patent"). Plaintiff, The Saunders Group, Inc.'s, Motion for Summary Judgment (Docket # 57) seeks a ruling that both the G2 and G3 cervical traction devices infringe claims 1-3, 8-13, and 16-21 of the '690 Patent.¹ For the reasons discussed below, the

¹ Also at issue in plaintiff's motion is defendants' affirmative defense that the patent is invalid based on the doctrine of obviousness. However, that issue is moot in light of the Court's conclusion that the G2 and G3 devices do not infringe. Accordingly, the Court will not address obviousness as an affirmative defense.

Court finds that summary judgment should be granted in defendants' favor.

I. Background

The plaintiff and the defendants are competitors in the field of developing and selling medical devices. The products at issue in this case are relatively inexpensive, light-weight cervical traction devices which are intended to be used by patients in their homes after a doctor or physical therapist prescribes use of the product and demonstrates to the patient how to use it properly. The benefit of such devices is that the patient does not have to go to a doctor or therapist's office to receive traction therapy, but may do so in his home.

A. The Prosecution History

The '690 Patent was the culmination of three separate applications to the United States Patent and Trademark Office ("USPTO").² On November 3, 1994, H. Duane Saunders ("Saunders") and Mark R. Stultz ("Stultz") filed the first application, U.S. Patent Application No. 08/334,189 ("the '189 Application"), which was directed to "a portable traction device powered by a

²The patentee also filed an international patent application on Oct. 31, 1995. Materials related to this application are included in the file history of U.S. Patent No. 6,506,174 (filed Oct. 31, 1995, and issued Jan. 14, 2003) ("the '174 Patent"). If the international application is considered a separate application, then the '690 Patent is actually the result of four separate patent applications.

pneumatic cylinder." The '189 Application described a portable traction device without specifying a specific part of the body to which it was directed, i.e., lumbar or cervical region; however, most of its claims were nearly identical to the claims contained in the '690 Patent, which is the patent at issue in this case.

Specifically, each of the independent claims in the '189 Application claimed a pneumatic cylinder utilizing "at least one pressure activated seal." These claims were initially rejected by the hearing examiner on April 26, 1996. The claims were amended on August 19, 1996,³ and were "finally" rejected by the USPTO on November 12, 1996. The inventors filed a notice of appeal, but thereafter abandoned the application without perfecting the appeal. The '189 Application did not result in the issuance of a patent.

On or about October 22, 1997, Saunders and Stultz filed their second patent application, U.S. Patent Application No. 08/817,444 ("the '444 Application"), as a continuation-in-part of the '189 Application. The '444 Application contained text substantially equivalent to that used in the '690 Patent, specifically in the sections titled "Field of the Invention,"

³The amendment struck the original 21 claims and added new claims 22-40. The new claims included three independent claims: claims 22, 39, and 40. Claims 22 and 40 did not include the requirement of at least one pressure activated seal, but claim 39 did. (File History of the '189 Application, Amendment and Response of Aug. 19, 1996 at 2, 5.)

"Background of the Invention," "Summary of the Invention" and "Detailed Description of the Preferred Embodiment." (File History of the '174 Patent, Application at 1-11.) Again, of significance to this case, each of the independent claims of the '444 Application recited the use of a pressure activated seal in the pneumatic cylinder of the claimed device. (File History of the '174 Patent, Application at 12, 14-15.)

The claims of the '444 Application were rejected by the hearing examiner on the basis of obviousness, in light of various prior art references. (File History of the '174 Patent, Office Action, March 11, 1999.) Specifically, the hearing examiner rejected some claims as unpatentable over Freed (U.S. Patent No. 5,067,483) in view of Gantz (U.S. Patent No. 5,092,322) and Gaskill, et al. (U.S. Patent No. 5,169,160) and others as unpatentable over Dyer (U.S. Patent No. 4,995,378) in view of Loveless (U.S. Patent No. 4,428,276). (File History of the '174 Patent, Office Action, March 11, 1999.) The inventors appealed that rejection to the Board of Patent Appeals and Interferences ("the Board"), which sustained the hearing examiner's rejection on the basis of the Freed combination, but overruled the hearing examiner's rejection as to the Dyer combination. (File History of the '174 Patent, Decision on Appeal, Appeal No. 2000-1681, Board of Patent Appeals and Interferences, Sept. 26, 2001.) The claims allowed by the Board issued as the '174 Patent. The specification

of the '174 Patent is identical to the specification in the patent at issue in this case, the '690 Patent, except that the '174 Patent claims a lumbar traction device rather than a cervical traction device.

On December 16, 2002, Saunders and Stultz filed U.S. Patent Application No. 10/320,589 ("the '589 Application") as a continuation of the '444 Application. The '589 Application resulted in the issuance of the '690 Patent, the patent at issue in this litigation.

B. The Text of the Patent

The '690 Patent claims a portable cervical traction device powered by a pneumatic cylinder. The claims at issue consist of two independent claims, 1 and 16, and numerous dependent claims. Claims 2, 3, and 8-13 are dependent on claim 1, and claims 17-21 are dependent on claim 16.

Independent claim 1 of the '690 Patent claims:

1. A cervical traction device comprising:
 - a support structure having a track;
 - a carriage having a slide bracket slidable along a portion of the track;
 - a restraining mechanism adapted to releasably restrain a portion of a patients' body to the carriage;
 - a pneumatic cylinder having a first end and a moveable piston rod at a second end, one of the pneumatic cylinder or the piston rod attached to the support structure and the other attached to the carriage, the pneumatic cylinder adapted to move the carriage along the track relative to the support structure when in a pressurized state, the pneumatic cylinder maintaining a generally static traction force for a period in excess of 10 minutes when in the pressurized state without additional pressurized air being supplied;

and
a hand pump fluidly connected to the pneumatic cylinder
and adapted to inject pressurized air into the
pneumatic cylinder, the hand pump having a handle
moveable relative to a body portion injecting at
least 138kPa (20 psi) of pressure into the pneumatic
cylinder.⁴

II. Discussion

The key issue presented by the parties' motions for summary judgment is whether the defendants' G2 and G3 devices infringe, either literally or under the doctrine of equivalents, claims 1-3, 8-13, and 16-21 of the '690 Patent. "A determination of infringement requires a two step analysis. First, the claim must be properly construed to determine its scope and meaning. Second, the claim as properly construed must be compared to the accused device or process." Ethicon Endo-Surgery, Inc. v. U.S. Surgical Corp., 149 F.3d 1309, 1315 (Fed. Cir. 1998) (internal citations omitted). A device infringes if each element of a claim is found in the accused device. Karlin Tech., Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 974 (Fed. Cir. 1999).

The first step, claim construction, is a matter of law to be determined by the court. Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc). In the second step,

⁴Because claim 16 and claim 1 use identical language in describing the claimed pneumatic cylinder, our analysis of the meaning of that term and conclusion that neither the G2 nor G3 devices infringe that element renders any further analysis of claims 16-23 unnecessary.

the court applies the well-known summary judgment standard, granting summary judgment only if there is no genuine issue as to any material fact and the moving party is entitled to judgment as a matter of law. Fed. R. Civ. P. 56(c); Ethicon Endo-Surgery, Inc., 149 F.3d at 1315. To prevail on its infringement claim at the summary judgment stage, the plaintiff must present sufficient evidence to establish that each element of the claims at issue is found in the accused devices. To prevail at the summary judgment stage on their claim of non-infringement, the defendants need only establish that their accused devices do not include every element of the claims at issue.

A. Claim Construction

In Phillips v. AWH Corp., 415 F.3d 1303 (Fed. Cir. 2005), the Federal Circuit, sitting en banc, articulated the principles that apply to construing patent claims. First, the words of a claim are "generally given their ordinary and customary meaning." Id. at 1312. "[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." Id. at 1313. When a court interprets a claim, it must analyze the ordinary meaning, "in the context of the entire patent, including the specification." Id. In some cases "the specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would

otherwise possess" or the specification may "reveal an intentional disclaimer, or disavowal, of claim scope by the inventor." Id. at 1316. Although extrinsic evidence such as expert opinion and dictionary definitions may be employed by the court in construing patent claims, this material must always be considered in the context of the intrinsic evidence. Id. at 1317-19.

The primary issue of claim construction before this Court is whether the term "pneumatic cylinder" as used in independent claims 1 and 16 of the '690 Patent requires that the claimed pneumatic cylinder utilize at least one pressure activated seal.⁵ The defendants put forth two arguments in favor of the conclusion that the pneumatic cylinder claimed in the '690 Patent must employ at least one pressure activated seal. First, defendants argue that the phrase "maintaining a generally static traction force" is a means-plus-function claim for which both the specification and prosecution history identify "at least one

⁵Because the Court determines from the intrinsic evidence that the pneumatic cylinder claimed in the '690 Patent must have at least one pressure activated seal, and because this claim construction precludes a finding of infringement with respect to both the G2 and G3 devices, the Court declines to construe the additional claim terms raised by the parties. Moreover, the Court will not address any of the dependent claims at issue other than claim 6, because a dependent claim includes all of the limitations of the independent claim as well as its own additional limitations. Therefore, if a device is found not to infringe an independent claim, it necessarily follows that it cannot infringe any claim dependent on that independent claim.

pressure activated seal” as the structure that performs the claimed function. Second, the defendants argue that the intrinsic evidence requires the conclusion that the term “pneumatic cylinder” as used in the ‘690 Patent, includes as a necessary part of its meaning “having at least one pressure activated seal.”

1. Means-Plus-Function Limitation

The defendants argue that the requirement expressed in claim 1, “the pneumatic cylinder maintaining a generally static traction force,” is a means-plus-function limitation. If this element is indeed a means-plus-function limitation, the Court must first identify the function of the claim element, and then look to the specification to identify the structure corresponding to that function. Micro Chemical, Inc. v. Great Plains Chemical Co., Inc., 194 F.3d 1250, 1257-58 (Fed. Cir. 1999). The defendants argue that the specification teaches that the “at least one pressure activated seal,” is the structure that corresponds to the function “maintaining a generally static traction force” and that therefore their devices, which do not include a pressure activated seal, do not infringe claims 1 and 16 of the ‘690 Patent.

Means-plus-function analysis arises out of 35 U.S.C. § 112, ¶ 6, which states, “An element in a claim for a combination may be expressed as a means or step for performing a specified

function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.” The Federal Circuit has held that “[i]f the word ‘means’ appears in a claim element in association with a function,” then the court will presume that a means-plus-function analysis applies. Micro Chemical, Inc., 194 F.3d at 1257. However, if the word “means” does not appear in a claim element, then the element is “presumed to fall outside means-plus-function strictures.” Id. The element of the asserted claims that the defendants argue is a means-plus-function limitation does not include the word “means.” Therefore, it is presumed not to be subject to means-plus-function analysis under 35 U.S.C. § 112, ¶ 6.

However, the presumption that means-plus-function analysis does not apply “can collapse when an element lacking the term ‘means’ nonetheless relies on functional terms rather than structure or material to describe performance of the claimed function.” Micro Chemical, Inc., 194 F.3d at 1257. A party may rebut the presumption that means-plus-function analysis does not apply “if it demonstrates that the claim term fails to recite sufficiently definite structure or else recites a function without reciting sufficient structure for performing that function.” CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359,

1369 (Fed. Cir. 2002) (internal quotation omitted). To determine whether a claim term recites sufficient structure, the court must "examine whether [the claim term] has an understood meaning in the art." Id.

In this case, the limitation "maintaining a generally static traction force...without additional pressurized air being supplied" clearly recites a function rather than a structure. Read in isolation, that phrase would tend to cover any structure that could perform the function, rather than a particular structure invented or employed in a novel combination by the patent holder. However the claim at issue in this case prefaces that functional phrase with "the pneumatic cylinder." Thus, the claim itself teaches that the structure that will perform the described function is the pneumatic cylinder. It is clear that the term "pneumatic cylinder" has an understood meaning in the art. The parties themselves have offered similar, though not identical, definitions of the ordinary and customary meaning of "pneumatic cylinder" to a person of ordinary skill in the art of developing and selling medical devices. (Compare Defts.' Mem. In Supp. of Mot. For Summ. J. Of Non-Infringement at 12 with Pl.'s Mem. In Supp. of Its Mot. for Summ. J. at 9.) These definitions make it abundantly clear that the term "pneumatic cylinder" is not "a purely functional placeholder in which structure is filled in by the specification." Phillips v. AWH Corp., 415 F.3d 1303,

1311 (Fed. Cir. 2005).

Instead, the patent identifies the pneumatic cylinder as the structure that performs the recited function. Thus, means-plus-function analysis is inappropriate, and the Court will not look to the specification to determine whether the pressure activated seals are in fact the structure that "maintains a generally static traction force" rather than the pneumatic cylinder itself as stated in the claim.

2. Meaning of "pneumatic cylinder"

The defendants concede that the typical meaning of "pneumatic cylinder" does not require any particular type of seal.⁶ However, they argue that the specification and prosecution history of the '690 Patent reveal that the inventors intended that the term "pneumatic cylinder" have a specialized meaning in the context of the '690 Patent, namely, that it include at least one pressure activated seal. The plaintiff disputes this assertion, and argues that the term, "pneumatic cylinder" as used in claims 1 and 16 of the '690 Patent, should be given its ordinary meaning.

Although patent terms are usually construed to have their

⁶ See Defts.' Mem. In Supp. of Mot. For Summ. J. Of Non-Infringement at 12 (defining "pneumatic cylinder" as "a chamber defining an airtight region to one side of a piston, the chamber containing a piston and a piston rod for converting pressurized air into linear motion" but then adding that, "[t]he pneumatic cylinder of the '690 Patent requires at least one pressure activated seal").

ordinary meaning, a court may restrict the definition of a patent term "if the patentee acted as his own lexicographer and clearly set forth a definition of the disputed claim term in either the specification or prosecution history" or "if the intrinsic evidence shows that the patentee distinguished that term from prior art on the basis of a particular embodiment, expressly disclaimed subject matter, or described a particular embodiment as important to the invention." CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366-67 (Fed. Cir. 2002). However, the court must always be mindful of the "bedrock principle" of patent law that it is the claims themselves that "define the invention to which the patentee is entitled the right to exclude." Phillips, 415 F.3d at 1312. Thus, the court must strike a balance, interpreting the claim term in light of the specification without improperly importing limitations from the specification into the claim. Appropriately striking this balance "can present particular difficulties in a case such as this one, in which the written description of the invention is narrow, but the claim language is sufficiently broad that it can be read to encompass features not described in the written description, either by general characterization or by example in any of the illustrative embodiments." Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 905 (Fed. Cir. 2004).

The explicit requirement that the claimed pneumatic cylinder

have at least one pressure activated seal does not appear in either independent claim 1 or independent claim 16. However, the specification of the '690 Patent discloses only one embodiment for the internal workings of the claimed pneumatic cylinder.⁷ This embodiment teaches a pneumatic cylinder capable of maintaining the necessary traction force through the use of pressure activated seals. The specification states, with respect to the seals,

A pair of slots 88, 90 extending around the outside perimeter of the piston 80 contain a pair of pressure activated seals 92, 94. The seals 92, 94 are pre-shaped to form seal cavities 98, 100 facing upstream of the piston rod 30. It will be understood that the seals 92, 94 and seal cavities 98, 100 may be a variety of shapes.

The seals 92, 94 are arranged so that as pressurized air 91 enters the air inlet 42, and input chamber 96 is pressurized, a [sic] seal cavities 98, 100 are pressurized and the pressure activated seals 92, 94 are forced into engagement with the inside surface 84 of the cylinder wall 86. In the exemplary embodiment disclosed herein, approximately 13.8 kPa (2 psi) is required to engage the seals 92, 94....The pressure activated seal of the present pneumatic cylinder 32 is capable of maintaining a static traction force of greater than 111 N (25 lbs.) for a period in excess of 10 minutes, and preferably, a static tract on [sic] force of greater than 200 N (45 lbs.) for a period in excess of 20 minutes, without the need to supply additional pressurized air.

When the pressure in input chamber 96 is released, the seals 92, 94 disengage from the inside surface 84 and the piston 80 is allowed to move freely within the cylinder 32.

⁷The specification discloses multiple embodiments of portable traction devices, but only one embodiment of the claimed pneumatic cylinder, which is intended to be used to power all of the different portable traction devices.

'690 Patent col.4 l.25-54. The specification teaches no alternative means by which the pneumatic cylinder can maintain the required traction force. Although the specification clearly contemplates variations in cylinder and seal design, see '690 Patent col.4 l.30 ("It will be understood that the seals 92, 94 and seal cavities 98, 100 may be a variety of shapes."); '690 Patent col.4 l.37 ("In the exemplary embodiment disclosed herein, approximately 13.8 kPa (2 psi) is required to engage the seals"); '690 Patent col.4 l.55 ("The pneumatic cylinder 32 may include spring [sic] or other resilient compression member"), every variation discussed in this patent requires a pressure activated seal to produce the desired result.

The requirement for at least one pressure activated seal is apparent not only in the specification and description of the preferred embodiment, but throughout the entire text of the patent. For example, the "Abstract", describes the claimed device as:

A portable traction device suitable for cervical traction powered by a pneumatic cylinder....A pneumatic cylinder includes a cylinder housing attached to the support structure. The cylinder housing contains a piston and piston rod. The piston rod is attached to the carriage for moving the carriage along the longitudinal axis relative to the support structure when pressurized air is injected into the pneumatic cylinder. The piston has at least one pressure activated seal extending circumferentially around the piston for engagement with an inside surface of the cylinder housing.

'690 Patent, at [57] (emphasis added). Precisely the same language appears in the "Summary of the Invention" section of the specification. '690 Patent col.2 1.13-14. Moreover, although other elements described in the specification are qualified with phrases such as, "in one embodiment," "may include" or "preferably includes," see '690 Patent col.2 1.20 ("The carriage may include a head support pad"); '690 Patent col.2 1.25 ("A head support strap may be provided"); '690 Patent col.2 1.53 ("The hand pump preferably includes a gauge"); '690 Patent col.2 1.55-57 ("In one embodiment, the operator rotates the gauge relative to the hand pump"); '690 Patent col.2 1.57-61 ("The cylinder preferably includes a pressure regulator...[a]lternatively, the pressure regulator may be located on the hand pump"), the requirement for "at least one pressure activated seal" is never qualified in this way. Although more specific *attributes* of the pressure activated seals are described with such qualifications, the requirement for a pressure activated seal is not. See '690 Patent col.2 1.40 ("The pressure activated seal may be a pair of pressure activated seals"); '690 Patent col.2 1.45-50 ("In one embodiment, the pressure activated seal maintains a generally static traction force of greater than 111 N...[i]n an alternate embodiment, the pressure activated seal maintains a generally static traction force of greater than 200 N"). Thus, other than the specific words used in claims 1 and 16, every section of this

patent supports the conclusion that at least one pressure activated seal is a necessary element of the claimed device. The specification thus reveals a "special meaning": when the term pneumatic cylinder is used by this patentee, that term necessarily includes at least one pressure activated seal.

The prosecution history of the '690 Patent strongly supports the conclusion that the "pneumatic cylinder" claimed in the patent must include at least one pressure activated seal. Over an eight year period, from the initial filing of the '189 Application to the issuance of the '174 Patent for the lumbar traction device, the limitation of "at least one pressure activated seal" was explicit in each independent claim plaintiff submitted to the USPTO. The '189 Application included four independent claims. Claim 1 of the application included as a limitation,

a pneumatic cylinder for moving the carriage relative to the support structure when the pneumatic cylinder is pressurized, the pneumatic cylinder having at least one pressure activated seal extending circumferentially around a piston, the at least one pressure activated seal moveable between a relaxed position and an extended position so the pressure activated seal engages an internal surface on the pneumatic cylinder when the pneumatic cylinder is pressurized above a predetermined level

(File History of the '189 Application, Application at 10.) Claim 15, another independent claim included as a limitation,

a pneumatic cylinder attached to the support structure comprising a cylinder housing containing a piston and piston rod, the piston rod being attached to

the carriage for moving the carriage relative to the support structure when the pneumatic cylinder is pressurized, the piston having at least one pressure activated seal extending circumferentially around the piston for engagement with the cylinder housing

(File History of the '189 Application, Application at 12.)

Independent claims 18 and 21 included as part of the pneumatic cylinder limitation "the pneumatic cylinder means having a piston with at least one pressure activated seal" and "the pneumatic cylinder having at least one pressure activated seal" respectively. (File History of the '189 Application, Application at 13.)

The proposed claims submitted with the '444 Application almost three years later also included the limitation of at least one pressure activated seal. Claim 1 included as a limitation,

a pneumatic cylinder attached to a support structure for moving a carriage relative to the support structure when in a pressurized state, the pneumatic cylinder having at least one pressure activated seal extending circumferentially around a piston for engagement with an inside surface of a cylinder housing when in the pressurized state, the pneumatic cylinder maintaining a static traction force for a period in excess of 10 minutes when in the pressurized state without additional pressurized air being supplied

(File History of the '174 Patent, Application at 12.)

Independent claim 21 included even more detail with regard to the pressure activated seal. It claimed,

the pneumatic cylinder having at least one pressure activated seal extending circumferentially around a piston, the pressure activated seal moveable between a relaxed position and an extended position so the pressure activated seal engages an internal surface on

the pneumatic cylinder when the pneumatic cylinder is in the pressurized state, the pneumatic cylinder maintaining a static traction force for a period in excess of 10 minutes when in the pressurized state without additional pressurized air being supplied.

(File History of the '174 Patent, Application at 14-15.)

Moreover, throughout the prosecution of the '189 and '444 Applications, the inventors emphasized that what made their invention a novel combination over prior art was the device's ability to maintain a generally static traction force for a suitable amount of time to perform traction therapy without the need for additional pressurized air or any outside force being used. For example, in the proposed specification submitted as part of the '189 Application, the patentee summarized the state of art in the field and concluded, "what is needed is a low cost, light weight portable traction device utilizing a pneumatic cylinder which can maintain a constant traction force for a prolonged period of time." (File History of the '189 Application, Application at 2:20.)⁸

When faced with the hearing examiner's rejection of the proposed claims on grounds of obviousness over prior art, the inventors argued that,

Applicants have developed a pneumatic cylinder that is

⁸ The '690 Patent similarly describes the perceived need for the invention: "what is needed is a low cost, light weight portable traction device utilizing a pneumatic cylinder which can maintain a traction force of an adequate magnitude for a prolonged period of time." '690 Patent col.1 l.60.

capable of maintaining a suitable traction force for a specified period of time without additional pressurized air being supplied. No other structure or external force generation device is required to maintain the traction force. Applicants respectfully submit that none of the references of record disclosure [sic] a pneumatic cylinder capable of maintaining the traction force without some external force being added to the system.

(File History of the '174 Patent, Preliminary Amendment, May 4, 1998, at 6.) The inventors also distinguished their invention from the patented traction devices of Cook (U.S. Patent No. 5,181,904) and Whitehead (U.S. Patent No. 4,649,907) based on the pneumatic cylinder's ability to maintain a suitable traction force. (See File History of the '174 Patent, Preliminary Amendment, May 4, 1998, at 6-7 ("Cook does not disclose a pneumatic cylinder that can maintain a traction force for a predetermined period of time without additional pressurized air being supplied"); File History of the '174 Patent, Preliminary Amendment, May 4, 1998, at 7 ("The pneumatic cylinder of Whitehead does not maintain the splint in the desired location. Rather, Whitehead requires locking means 25 to maintain the traction splint in the selected position").)

Not only did the inventors argue that it was the claimed device's ability to maintain a static traction force that distinguished it from prior art, they consistently argued that what allowed their claimed pneumatic cylinder to accomplish this novel function was the use of at least one pressure activated

seal. The inventors' view of their invention was most clearly articulated in their appeal to the Board before which they claimed that the pressure activated seal in the claimed invention differed from the O-ring seal of Loveless (U.S. Patent No. 4,428,276), and that this difference was significant in preventing air leakage and maintaining a static traction force. (Ex. E, Defts.' Mem. In Opp. To Pl. The Saunders Group, Inc.'s Mot. For Summ. J. 10-11.) Specifically, the patentee argued,

It is asserted on page 6 of the office action that the cylinder of Loveless would be able to maintain a static traction force for a period in excess of 10 minutes since the air leakage in the cylinder will not occur. There is no teaching in Loveless for this capability. Moreover, Applicants' experience has been that such pneumatic cylinders do leak over time and are not suitable for maintaining a static traction force. Applicants submit that the combination and [sic] Dyer and Loveless fails to disclose the claimed pressure activated seals and a pneumatic cylinder capable of maintaining a static traction force for a period of time without addition [sic] of pressurized air being supplied.

Id. at 11 (emphasis added). As this statement unequivocally demonstrates, while prosecuting their patent, the inventors argued to the examiner that the pressure activated seals enabled the pneumatic cylinder to maintain a sufficient traction force, and that pneumatic cylinders utilizing O-ring seals would not be able to do so. The inventors' argument that other types of sealing structures were inadequate was considered by the hearing examiners and by the Board in making their decisions as to the asserted claims. Given this unequivocal statement, the inventors

explicitly disclaimed pneumatic cylinders utilizing O-ring seals, or any seal other than a pressure activated seal, to perform the critical function that made the claimed device innovative over prior art.

The inventors also suggested that other types of seal structures would not function properly for use in portable traction devices when arguing against the finding that certain claims were obvious over Freed in view of Gantz and Gaskill.

Gantz teaches that the rolling diaphragm type piston and cylinder arrangement is advantageous over sliding friction seals due to their leakage and friction. Gantz clearly teaches away from the [sliding friction] seals disclosed in Gaskill et al. No reasons have been provided why a skilled artisan would have selected the seals of Gaskill et al. for combination in the traction device of Gantz....In order for the proposed combination to generate a traction force of 25 lbs., a pump generating 0.0097 psi, such as disclosed in Gantz, would need to be attached to a pneumatic cylinder having a piston surface area of approximately 2,584 square inches. On a piston having a circular surface, 2,584 square inches corresponds to a diameter of slightly less than five feet (excluding supporting structure). Applicants respectfully submit that a pneumatic cylinder with a diameter of approximately five feet would be inoperative for use in the claimed portable traction device.

(Ex. F, Defts.' Mem. In Opp. To Pl. The Saunders Group, Inc.'s Mot. For Summ. J. at 7.) With these statements, the patentee clearly disclaimed the suitability of other types of seals for use in its claimed portable pneumatic device.

Despite the language of the patent's specification and the patentee's emphasis on the importance of the "at least one

pressure activated seal" throughout the prosecution history, plaintiff argues that Federal Circuit precedent requires this Court to construe the claim term "pneumatic cylinder" not to include having at least one pressure activated seal. First, plaintiff argues that this case presents precisely the same fact pattern as that of Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898 (Fed. Cir. 2004). Two significant facts differentiate this case from Liebel-Flarsheim. First, the Liebel-Flarsheim court specifically noted "the applicants' express statement in the prosecution history of the '261 patent that there is not 'necessarily a pressure jacket' in the claimed devices." 358 F.3d at 909. Thus, the USPTO was forthrightly told of the intended scope of the claims before they were finally allowed. As discussed above, in this case, throughout eight years of prosecuting this patent application the inventors argued that having at least one pressure activated seal was an element in each independent claim. They made specific arguments on multiple occasions stressing the importance of the pressure activated seals to the novelty of the claimed combination. At no point during that prosecution history did the inventors ever state that the device claimed in the '589 Application, which resulted in the '690 Patent, did not necessarily include at least one pressure activated seal.

Second, the parties and district court in Liebel-Flarsheim

agreed that, "during the prosecution of the '669 and '261 patents, the applicants learned about Medrad's jacketless injector and sought to omit reference to the pressure jacket in the asserted claims in order to encompass Medrad's injector." Id. There is no such evidence in this case. The prosecution history is devoid of any indication as to why the inventors changed the wording of the claims after eight years of consistently including the requirement of "having at least one pressure activated seal." Similarly, there is no explanation of why the limitation of "having at least one pressure activated seal" was omitted from claims 1 and 16 but included in independent claims 14 and 15.

Finally, the Liebel-Flarsheim court distinguished its decision from prior Federal Circuit decisions in which "there were specific reasons dictating a narrow claim construction beyond the mere fact that the specification disclosed only a single embodiment or a particular structure." Id. at 907. The court specifically distinguished its earlier decision in Watts v. XL Sys., Inc., 232 F.3d 877 (Fed. Cir. 2000), which held that the applicants "limited the scope of the invention by distinguishing close prior art in the prosecution history." Liebel-Flarsheim, 358 F.3d at 907 (summarizing the holding of Watts).

This Court has not concluded that the requirement of "having at least one pressure activated seal" must be included in the limitations of claims 1 and 16 based on the mere fact that the

specification disclosed only one embodiment of a pneumatic cylinder. Rather, in this case the patentee limited the scope of the invention when it emphasized to the USPTO the importance of the pressure activated seals to the proper functioning of its device and specifically disclaimed the effectiveness of alternative sealing structures. The patent applicants acknowledged that "[t]he traction therapy arts are extremely crowded, as shown in the extensive list of prior art cited by the Applicants" and then went on to disparage the rolling-diaphragm cylinder of Gantz and to assert that the O-ring seal of Loveless would cause leakage and be inappropriate for use in their claimed traction device. (Ex. F, Defts.' Mem. In Opp. To Pl. The Saunders Group, Inc.'s Mot. For Summ. J. at 7; Ex. E, Defts.' Mem. In Opp. To Pl. The Saunders Group, Inc.'s Mot. For Summ. J. at 10-11.) For these reasons, Liebel-Flarsheim is clearly distinguishable from the instant case.

The plaintiff also argues that the defendant's approach reflects the reasoning of the losing side of Phillips v. AWH Corp., 415 F.3d 1303 (Fed. Cir. 2005) (en banc). However, the facts of the case at bar are significantly different than those of Phillips. In Phillips, the court was asked to interpret the claim term "baffles," as used in a claim that described, "further means disposed inside the shell for increasing its load bearing capacity comprising internal steel baffles extending inwardly

from the steel shell walls.” Id. at 1324. The court’s task was to determine whether the claimed baffles could include panels disposed at a right angle, or only those disposed at acute or obtuse angles. Id. at 1324-27. In Phillips, the claimed baffles were described in the specification, but were also specifically described in the claims. The court in that case was faced with the task of reconciling a description from the specification with a somewhat more general description in the claim itself.

In contrast to Phillips, this Court is faced with patent claims that do not recite any type of seal at all. Although the patentee repeatedly advanced the argument that what was novel about its combination was that its pneumatic cylinder was light, inexpensive, portable, and able to maintain a sufficient traction force, claims 1 and 16 do not sufficiently describe the invention - a pneumatic cylinder that accomplishes this crucial task. The claims entirely fail to mention that the pneumatic cylinder has a piston or that it has a sealing structure of any kind. The specification, in contrast, describes the claimed pneumatic cylinder, clearly explaining the necessity of both a piston and a pressure activated seal. In sum, the Court must import limitations from the specification - namely, the requirement of a piston and at least one pressure activated seal, to give adequate meaning to the term pneumatic cylinder.

Although the Court is convinced that the proper claim

construction of "pneumatic cylinder" in claims 1 and 16 necessarily includes "having at least one pressure activated seal," the Court finds that if the claims were construed not to include that limitation, their validity would be undermined. The Federal Circuit has limited the reach of the maxim that claims should be construed to preserve their validity and has held that this principle applies only when "the court concludes, after applying all the available tools of claim construction, that the claim is still ambiguous." Phillips, 415 F.3d at 1326 (citing Liebel-Flarsheim, 358 F.3d at 911). At the very least, the specification and prosecution history, as detailed, supra, make claims 1 and 16 of the '690 Patent ambiguous as to whether the pneumatic cylinder must utilize at least one pressure activated seal.

A fundamental principle of patent law is that a patent's specification must enable one skilled in the relevant art to make and use the claimed device. 35 U.S.C. § 112. "[T]o be enabling, the specification of a patent must teach those skilled in the art how to make and use the full scope of the claimed invention without 'undue experimentation.'" Genentech, Inc. v. Novo Nordisk, A/S, 108 F.3d 1361, 1365 (Fed. Cir. 1997) (quoting In re Wright, 999 F.2d 1557, 1561 (Fed. Cir. 1993)) (alteration in original). If the "full scope of the claimed invention" were to include pneumatic cylinders without pressure activated seals that

are capable of maintaining a static traction force for the treatment period, the specification of the '690 Patent would provide absolutely no indication of how to construct the claimed invention because a pneumatic cylinder "having at least one pressure activated seal" is the only pneumatic cylinder described in the specification. Moreover, as discussed above, throughout the prosecution history the patentee did not believe that a traditional O-ring seal would allow a pneumatic cylinder to function properly in its device. Thus, the requirement that a valid patent claim be enabling supports the Court's interpretation of "pneumatic cylinder" as having at least one pressure activated seal. In addition, given the hearing examiner and Board's concerns about the obviousness of the patent, as well as the admittedly crowded nature of the field of traction therapy devices, a narrow construction of the claim terms is warranted.

Plaintiff's reliance on the doctrine of claim differentiation is of no help. Under that doctrine, "two claims of a patent are presumptively of different scope." Kraft Foods, Inc. v. International Trading Co., 203 F.3d 1362, 1366 (Fed. Cir. 2000). Plaintiff points to dependent claim 6 of the '690 Patent as the first claim to include the limitation of having at least one pressure activated seal.⁹ Claim 6 provides for

⁹Claim 5 also references seals: "The apparatus of claim 4 [claim 4 incorporates the apparatus of claim 1] wherein the gap is capable of permitting generally uniform circumferential

The apparatus of claim 1 comprising at least one pressure activated seal movable between a relaxed position and an extended position so the pressure activated seal engages an internal surface on the pneumatic cylinder when the pneumatic cylinder is in the pressurized state for engagement with an inside surface of a cylinder housing when in the pressurized state.

'690 Patent col.8 l.21-29.

Plaintiff argues that if "having at least one pressure activated seal" were part of the meaning of "pneumatic cylinder," this dependent claim would not be different in scope from claim 1. Normally, dependent claims may clarify the scope of an independent claim from which they depend, but this is not always the case. North Am. Vaccine, Inc. v. American Cyanamid Co., 7 F.3d 1571, 1577 (Fed. Cir. 1993). In this case, plaintiff's claim differentiation argument fails for two reasons. First, the language in dependent claims 5 and 6 can be interpreted as defendants suggest, to impart a narrowing limitation on the pressure activated seal element for the first time. (See Defts.' Mem. In Supp. of Mot. For Summ. J. Of Non-Infringement at 14.) More significantly, a dependent claim must have a claim from which to depend. As discussed above, without including "having at least one pressure activated seal" in the definition of pneumatic cylinder, the two independent claims, claims 1 and 16, would be invalid because they would fail to disclose the claimed

pressurization of seals against the inside surface of the cylinder housing." '690 Patent col.8 l.18-20.

invention. A core feature of this invention is the ability of the pneumatic cylinder to maintain certain amounts of pressure for certain periods of time without additional pressure being supplied. The only mechanism disclosed or even suggested in the specifications and prosecution history for achieving such steady pressure is the presence of at least one pressure activated seal. Therefore, the doctrine of claim differentiation does not support the plaintiff's position.

For all of the foregoing reasons, the Court construes the claim term "pneumatic cylinder" to include within its meaning "having at least one pressure activated seal."

B. Comparison to the G2 and G3 devices

The plaintiff has conceded that the G2 device at issue in this lawsuit employs "a conventional O-ring seal." (Ex. J, Defts.' Mem. In Supp. of Mot. For Summ. J. Of Non-Infringement at 21 (admitting that "the G1 or G2 model, whichever it is, in [the plaintiff's] possession uses 'a conventional O-ring seal' as Plaintiff understands that phrase").) The plaintiff further admits that the O-ring seal used "remains in contact with inner walls of a cylinder regardless of the application of pressure." Id. at 21-22. As previously noted, during the prosecution history of this patent the patentee specifically distinguished the "O-ring seal of Loveless" from the pressure activated seals of the claimed device. The patentee explained, "The claimed

pressure activated seals have a geometry that changes with the introduction of pressure into the cylinder....The seal in Loveless is a conventional O-ring 37 that does not change shape with air pressure." (Ex. E, Defts.' Mem. In Supp. of Mot. For Summ. J. Of Non-Infringement at 10.) Thus, the plaintiff has conceded that an O-ring seal is not a "pressure activated seal" as that term is used in the specification of the '690 Patent.

Given the Court's construction of "pneumatic cylinder", no reasonable jury could conclude that the G2 device contains a "pneumatic cylinder" as claimed in the '690 Patent. For these reasons, the Court concludes that the G2 device cannot literally infringe any of the asserted claims of the '690 Patent.

The plaintiff has even more forthrightly admitted that the defendants' G3 device does not include a pressure activated seal as that term is used in the '690 Patent. (Ex. J, Defts.' Mem. In Supp. of Mot. For Summ. J. Of Non-Infringement at 26.) Therefore, given the Court's construction of the claim term "pneumatic cylinder," no reasonable jury could find that the defendants' G3 device literally infringes any of the asserted claims of the '690 Patent.

C. Doctrine of Equivalents Infringement

The plaintiff has argued that if the defendants' devices do not literally infringe the asserted claims of the patent, they nonetheless infringe under the doctrine of equivalents. Under

this doctrine "a claim limitation not literally met may be satisfied by an element of the accused product if the differences between the two are 'insubstantial' to one of ordinary skill in the art." Boehringer Ingelheim Vetmedica, Inc. v. Schering-Plough Corporation, 320 F.3d 1339, 1351 (Fed. Cir. 2003). The determination of whether differences between the limitation and the accused device's structure are insubstantial may be "guided by determining whether the element in the accused device performs substantially the same function in substantially the same way to obtain the same result as the claim limitation." Id. (internal quotation omitted). In addition, the court must apply the doctrine of equivalents "to individual elements of the claim, not to the invention as a whole." Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co., 520 U.S. 17, 29 (1997). Focusing on the elements is necessary to prevent "enlarg[ing] a patent beyond the scope of its claims as allowed by the Patent Office" Id. (quoting Hilton Davis Chem. Co. v. Warner-Jenkinson Co., Inc., 62 F.3d 1512, 1573-74 (Fed. Cir. 1995) (Nies, J., dissenting)).

The Court has construed the term "pneumatic cylinder" to require having at least one pressure activated seal. Assuming, arguendo, that the G2 and G3 devices include structures that could be generally characterized as pneumatic cylinders, no reasonable jury could conclude that the pneumatic cylinders of the G2 and G3 devices perform their function, "maintaining a

generally static traction force," in the same "way" as the pneumatic cylinder of the patented device. The pneumatic cylinder of the patented device maintains a static traction force by utilizing the claimed pressure activated seals. The G2 device utilizes a standard O-ring seal, a seal that the patentee did not believe capable of maintaining a sufficient static traction force at the time of the patent's prosecution. The G3 device utilizes a corrugated tubing seal that the plaintiff has admitted is not a "pressure activated seal." Each of these different seals is clearly a different "way" in which to cause a pneumatic cylinder to maintain a static traction force. This conclusion is not contradicted by any evidence of record, including the various expert reports. The plaintiff's expert's report provides no analysis under the doctrine of equivalents, and no opinion on the function-way-result comparison between the two devices. See Durfee Decl., Ex. A. In effect, the plaintiff rests its doctrine of the equivalents argument on the conclusory assertion that because its expert believes that defendants' devices literally infringe on the patent, they also must infringe based on the doctrine of equivalents. This is not a sufficient basis on which to deny summary judgment of non-infringement. Zelinski v. Brunswick Corp., 185 F.3d 1311, 1317 (Fed. Cir. 1999) ("[b]ecause there is literal infringement, there is infringement under the doctrine of equivalents" is insufficient evidence to survive

summary judgment)(alteration in original).

In addition, given the plaintiff's express disavowal of the capability of an O-ring seal to maintain a sufficient static traction force, plaintiff cannot now claim that a device with an O-ring is equivalent. The patentee's belief, expressed to the USPTO, that other sealing structures could not perform adequately in the claimed device clearly demonstrates that a difference in sealing structures would be considered "substantial" rather than "insubstantial" to one of ordinary skill in the relevant art.

At trial, plaintiff would bear the burden of persuasion on the question of infringement under the doctrine of equivalents. Because the plaintiff has produced nothing more than the conclusory assertion that because the device literally infringes it must also infringe under the doctrine of equivalents, the plaintiff has not presented sufficient evidence to persuade a reasonable jury that the G2 and G3 pneumatic cylinders perform their function in the same "way" as the claimed pneumatic cylinder. Accordingly, summary judgment of non-infringement is appropriate as to both of the defendants' accused devices. Exigent Tech., Inc. v. Atrana Solutions, Inc., 442 F.3d 1301, 1309 (Fed Cir. 2006).

III. Conclusion

For the reasons explained in this Memorandum Opinion,

defendants' Motion for Summary Judgment of Non-Infringement will be granted. Having found summary judgment in defendant's favor proper, it is unnecessary to consider plaintiff's argument that the defendants' affirmative defense of obviousness should be stricken. An appropriate order will issue.

Entered this 28th day of July, 2006.

/s/
Leonie M. Brinkema
United States District Judge

Alexandria, Virginia